



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/052,784	11/02/2001	Kevin A. Marshall	SUN1P749/P5575NP	3211
22434	7590	10/05/2004	EXAMINER	
BEYER WEAVER & THOMAS LLP P.O. BOX 778 BERKELEY, CA 94704-0778			PHAM, CHRYSTINE	
			ART UNIT	PAPER NUMBER
			2122	

DATE MAILED: 10/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/052,784	Applicant(s) MARSHALL, KEVIN A.	
	Examiner Chrystine Pham	Art Unit 2122	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 6, 10-12, 15, and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 6, the term "prone to error" in claim 6 line 3 is a relative term which renders the claim indefinite. The term "prone to error" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The office's rationale for viewing the term "prone to error" as relative term is such that, depending on different systems and/or standards of measuring the probability of software/program errors, it is possible to define "prone to error" software components as those that have a 50%, 75%, or 99% inclination toward being erroneous. Furthermore, a 99% "prone to error" software component as defined in one system or standard of measurement might not be in compliance with a different system or standard of measurement in which a "prone to error" software component is defined as that which has a 99.99% inclination toward being erroneous. For compact prosecution of the claims, the office has interpreted the term "prone to error" as to mean having 1 or more errors.

As per claim 10, it recites the limitation "the one or more functions" in line 1-2. There is insufficient antecedent basis for this limitation in the claim. For compact prosecution of the claims, the office has interpreted the limitation "the one or more functions" as referring to the

limitation "the one or more software components" recited in line 8 of claim 1. "the one or more functions", hereinafter, will be interpreted as "the one or more software components".

As per claim 11, it is also rejected under 35 U.S.C 112 second paragraph as claim depending on rejected base claim 10.

As per claim 12, it recites the limitation "the current version of the file" in line 2. There is insufficient antecedent basis for this limitation in the claim.

As per claim 15, the term "certain level of priority" in claim 6 line 3 is a relative term which renders the claim indefinite. The term "certain level of priority" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The office's rationale for viewing the term "certain level of priority" as relative term is such that, depending on different systems and/or standards of measuring software/program errors, it is possible to mark the "certain level of priority" at level 1, 3, 5, 7, 8, or 9 on a 1 to 10 level priority scale. Furthermore, the "certain level of priority" (e.g., defined at level 9) in one system or standard of measurement might not be in compliance with a different system or standard of measurement in which a "certain level of priority" is marked at level 9.5. For compact prosecution of the claims, the office has interpreted limitation "certain level of priority" [errors] to refer to errors that are most frequently encountered and must be corrected.

As per claim 24, it recites the limitation "the method" in line 2. There is insufficient antecedent basis for this limitation in the claim. For compact prosecution of the claims, the office has interpreted the limitation "the method" as referring to the limitation "apparatus" recited in line 1 of claim 24. "the method" in claim 24, hereinafter, will be interpreted as "the apparatus".

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-3, 6, 16, and 22-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Chung et al. (US 6745348), hereinafter *Chung et al.*.

As per claim 1, *Chung et al.* teach a method (e.g., see Abstract), apparatus (e.g., see FIG.1 & associated text) comprising a processor (e.g., see CPU 10 FIG.1 & associated text) a memory (e.g., see RAM 14, disk units 20 FIG.1 & associated text), and a computer-readable medium storing instructions (e.g., col.4:27-32, see application 42 FIG.1 & associated text) for automatically generating data regarding errors in a software system (e.g., see Abstract), the software system including one or more software components (e.g., see 301A, source file 311A, 301B, 301C FIG.3 & associated text), the method comprising:

- obtaining/examining contents of one or more files (e.g., see Table 1 col.6:10-26) indicating one or more errors (i.e., file history/record of one or more errors) (e.g., see Errors col.6:12-25) in the software system to determine one or more of the software components/source files prone to or responsible for the errors (e.g., see Component col.6:12-25) and a number of the errors attributed to each of the software components determined to be responsible for the errors (e.g., see 203 FIG.2 & associated text, see Errors col.6:12-25); and
- determining a size of the one or more software components responsible for the errors (e.g., number of lines of code col.2:1-4, see 201 FIG.2 & associated text, see Lines of Code Scanned col.6:11-25).

As per claim 2, *Chung et al.* teach the method as recited in claim 1, further comprising correlating the size (e.g., *number of lines of code* col.2:1-4, see 201 FIG.2 & associated text, see *Lines of Code Scanned* col.6:11-25) of the determined software components (e.g., see *Component* col.6:12-25) with the number of errors attributed to the determined software components (e.g., see 203 FIG.2 & associated text, see *Errors* col.6:12-25), thereby enabling data indicating a probability of errors (e.g., see 204 FIG.2 & associated text, col.6:45-56) occurring during execution (e.g., col.1:15-21, see *internationalization faults/errors* col.1:58-60) of a set of software components to be generated from the determined size of the software components determined to be responsible for the errors and the number of the errors attributed to each of the software components determined to be responsible for the errors (e.g., see FIG.2 & associated text).

As per claims 3, 6, and 16, they recite limitations which have been addressed in claim 2, therefore, are rejected for the same reasons as cited in claim 2.

Claim 22 recites a computer-readable medium version of the method addressed in claim 1, therefore, is rejected for the same reasons as cited in claim 1.

Claims 23 and 24 recite an apparatus version of the method addressed in claim 1, therefore, are rejected for the same reasons as cited in claim 1.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to

a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 4-5, and 15, rejected under 35 U.S.C. 103(a) as being unpatentable over *Chung et al.* further in view of *Ruhlen et al.* (US 6665824), hereinafter, *Ruhlen et al.*.

As per claim 4, *Chung et al.* teach the method as applied to claim 3. *Chung et al.* do not expressly disclose the contents of one or more files examined further indicating one or more source code modifications made in response to the errors. However, *Ruhlen et al.* disclose a method for tracking/ counting errors which occur during the execution of the software components (e.g., col.1:15-18, col.1:23-28, see *failure reporting executable* 230 FIG.2 & associated text) in a software system including one or more software components (e.g., col.4:10-13), storing the modifications (i.e., source code changes) made in response to the errors (e.g., col.3:63-67), in a file (e.g., see *repository* 235 FIG.2 & associated text, col.2:11-13). *Chung et al.* and *Ruhlen et al.* are analogous art since they're both directed to tracking and counting the number of errors occurred in a software system. It would have been obvious to one of ordinary skill in the pertinent art at the time the invention was made to modify the teaching of *Chung et al.* with that of *Ruhlen et al.* to include tracking and storing modifications made in response to the errors. And the motivation for doing so would have been to minimize the time and cost of error query processing as conventionally performed by a computer program, thus improving the technique for locating of errors in a software system and improve the handling of error queries and technical support in an environment where the software system is distributed and used by a large number of clients.

As per claim 5, *Ruhlen et al.* (or the modified *Chung et al.*) teach the method as applied to claim 4, wherein determining from the one or more files one or more of the software components responsible for the errors comprises: determining from the source code modifications/changes (e.g., see *application version number, module version number* col.6:66-

Art Unit: 2122

col.7:3, see "10.0.2310.1", "10.0.2312.1" col.7:10-25) one or more software components modified (e.g., see *application program name, module name* col.6:66-col.7:3, see "winword.exe", "mso.dll" col.7:10-25) to correct the errors (e.g., see *failing instruction's instruction pointer* col.6:66-col.7:3, see "0bcd1234" col.7:10-25). It would have been obvious to one of ordinary skill in the pertinent art at the time the invention was made combine the teachings and the motivation for doing so would have been that which has been as applied to claim 4.

As per claim 15, *Chung et al.* teach the method as applied to claim 1. *Chung et al.* do not expressly disclose the errors exceed a certain level of priority. However, *Ruhlen et al.* disclose errors which exceed a certain level of priority (e.g., col.8:3-7, see 312 FIG.3 & associated text).). It would have been obvious to one of ordinary skill in the pertinent art at the time the invention was made combine the teachings and the motivation for doing so would have been that which has been as applied to claim 4.

7. Claims 7-9, and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Chung et al.* as modified by *Ruhlen et al.* further in view of Leung (US 6769114), hereinafter, *Leung*.

As per claim 7, *Ruhlen et al.* (the modified *Chung et al.*) teach the method as applied to claim 1, wherein examining contents of one or more files indicating one or more errors in the software system comprises generating a list of one or more errors corresponding to source code changes (see claim 4). The combined teaching (*Chung et al.* & *Ruhlen et al.*), hereinafter referred to as **C2**, do not expressly disclose generating a list of one or more files associated with successful attempts to correct the errors. However, *Leung* discloses a method (e.g., see Abstract) of tracking/associating errors (e.g., col.6:25-41) with modifications (i.e., versions, files, source code changes) (e.g., see *software modifications* col.3:25-29, see *second version* col.9:20-23, col.12:58-61) and associating modifications with successful attempts (e.g., see *previous passed integration tests* col.3:25-29, col.9:20-23) to correct the errors (e.g., col.1:19-23, see

interface error col.9:27-28, see *sequence error* col.9:31-32, col.12:62-64, col.11:1-6). **C2** and *Leung* are analogous art since they're both directed at tracking errors in a software system. It would have been obvious to one of ordinary skill in the pertinent art at the time the invention was made modify the teaching of **C2** with that of *Leung* to include the associating of modifications with successful attempts to correct the errors. And the motivation for doing so would have been to monitor the modifications of software components and prevent them from invalidating previous tested and passed versions (i.e., successful attempts to correct errors/defects) of the software components.

As per claims 8-9, 13-14, they recite limitations which have been addressed in claims 4 and 7, therefore, are rejected for the same reasons as cited in claims 4 and 7.

8. Claims 10-12, 17-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Chung et al.* as modified by *Ruhlen et al.* further in view Hanson (US 5946493), hereinafter *Hanson*.

As per claim 10, *Ruhlen et al.* (the modified *Chung et al.*) teach the method of claim 1 wherein determining a size of the one or more software components responsible for the errors comprises determining a section of code modified (i.e., modifications, versions) to fix an error (see claim 5). The combined teaching of *Chung et al.* and *Ruhlen et al.* (**C2**) do not expressly disclose determining start and end lines of a section of code. However, *Hanson* discloses a method (e.g., see Abstract) for determining the start (e.g., see *first line 112* FIG.3A & associated text) and end lines (e.g., see *last annotated line 116* FIG.3A & associated text) of a section of code (e.g., see FIG.2A, 2B, 2D & associated text), matching one or more line numbers associated with source code against compiled information (e.g., see *101* FIG.3A & associated text) associated with the source code (e.g., see *106* FIG.3A & associated text, col.1:32-36, col.1:53-58), converting the start (e.g., see *[10]* FIG.2A & associated text) and end lines (e.g., see *[12]* FIG.2A & associated text) of a section of source code to the start (e.g., see *28* FIG.2B &

associated text) and end lines of a current version (e.g., see 40 FIG.2B & associated text, see *object code* col.1:32-36) of a file (e.g., see 108 FIG.3A & associated text). It would have been obvious to one of ordinary skill in the pertinent art at the time the invention was made modify the teaching of **C2** with that of *Hanson* to include determining the start and end lines for a section of code modified to fix an error, matching line numbers associated with the modified source code against compiled information associated with the source code and converting the start and end lines of a section of code to the start and end lines of a current version of a file. And the motivation for doing so would have been to generate a listing associating/mapping the object code (compiled) instructions with the source code instructions which can be used to debug the program, investigate performance problems, and improve the analysis of the quality of the compiled object code.

As per claims 11-12, 17-19, and 21, they recite limitations which have been addressed in claims 5 and 10, therefore, are rejected for the same reasons as cited in claims 5 and 10.

As per claim 20, *Hanson* (the modified **C2**) teach the method of comparing information associated with a source code to determine one or more line numbers associated with the modified source code (e.g., see 108 FIG.3A & associated text). It would have been obvious to one of ordinary skill in the pertinent art at the time the invention was made to combine the teachings of *Hanson* and **C2** and the motivation for doing so would have been that which has been applied to claim 10.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:
- o Method for error identification in a program interface, Smith et al. (US 5761510)
 - o Service installation on a base function and provision of a pass function with a service-free base function semantic, Hunt (US 6546553)


- o Method and system for associating related errors in a computer system, Ben-Natan et al.
(US 5740354)
 - o Dynamic microcode for embedded processors, Siska (US 6263429)
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chrystine Pham whose telephone number is 703.605.1219. The examiner can normally be reached on Mon-Fri, 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q Dam can be reached on 703.305.4552. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chrystine Pham
Examiner
GAU 2122

***After October 25, 2004, examiner can be reached at new telephone number (571) 272-3702, and the examiner's supervisor, Tuan Q. Dam can be reached on (571) 272-3694.



TUAN DAM
SUPERVISORY PATENT EXAMINER